ABSTRACT

An apparatus for obtaining coherent scatter imaging data of an object (5) comprises a stack of line detectors ($6a_1$-$6a_{n-1}$,$6a_{n+1}$-$6a_N$), each being directed towards a small portion of the trajectory (2b) of a radiation beam (2a) passed through the object (5) to allow a ray bundle (b_1-b_{n-1},b_{n+1}-b_N) of the radiation beam (2a) as coherently scattered in the object to enter the line detector and be detected therein. Each of the line detectors has an elongated opening (30) for entry of the respective scattered ray bundle; a row of detector elements (27) arranged parallel with the opening; and is of the kind wherein charges or photons generated by interactions between the respective scattered ray bundle and a detection medium and traveling in a direction perpendicular to the respective scattered ray bundle, are detected by the detector elements. The line detectors and their respective detector elements are oriented to allow simultaneous recording of scatter data sufficient to form multiple one-dimensional images, each being composed of radiation as scattered in the object in a respective angle.